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ABSTRACT

The data in this survey were collected by the Ontario Council on Graduate Studies during the summer and fall of 1969 in order to permit an evaluation of the employment pattern of the recent Ph.D graduates. For each person who had graduated with the Ph.D. in the calendar years 1964-68 and in the spring of 1969, a questionnaire was sent to the student's supervisor or to his department. The results of this questionnaire are deemed to be highly accurate. The first 7 tables presented offer data concerning the citizenship of Ph.D. graduates, and the remaining 18 tables offer data relative to employment of Ontario Ph.D.'s in the fall of 1969 and to immediate post-graduation employment. A supplement printed in January 1971 presents tables that show immediate post-graduation employment of Ph.D.s following the Autumn and Spring Convocation of Ontario universities, 1969-70. (HS)

ED 069262

SURVEY OF EMPLOYMENT OF ONTARIO PH.D. GRADUATES - 1964-69

A STUDY UNDERTAKEN FOR THE

ONTARIO COUNCIL ON GRADUATE STUDIES

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December, 1970.

INTRODUCTION

The data in this survey were collected by the Ontario Council on Graduate Studies during the summer and fall of 1969 in order to permit an evaluation of the employment pattern of the recent Ph.D. graduates. It is a relatively complete survey and gives considerable useful information.

For each person who had graduated with the Ph.D. in the calendar years 1964-68 and in the spring of 1969, a questionnaire was sent to the student's supervisor or to his department. Since most professors are aware of the subsequent careers of their own doctoral students, very complete information resulted on both current employment and immediate post-graduation employment. Immediate post-graduation employment statistics can be misleading however since so many students take up post-doctoral fellowships or other temporary positions. This should be taken into account in interpreting the data.

The tables are largely self-explanatory but, in view of the fact that an examination of them leads to a number of important conclusions, a commentary prepared by Professor L. A. K. Watt of Waterloo University and Professor M. A. Preston of McMaster University is provided below. The tasks of preparing the questionnaire and supervising the computer analysis were undertaken by Professor K. Yates, University of Toronto.

COMMENTARY

The first few tables show that more than half of the PhDs came from Canada and that of the remaining students no one country provided a majority. It is clear that our graduate schools have admitted qualified students from many countries and many of these have chosen to remain in Canada. The summary tables on present employment of Landed Immigrants and Student Visa people (pages 23 and 24) show that 57% of the former and 21% of the latter remained in Canada. By comparison 80% of the Canadians remained.

The table on page 5, which shows the PhDs by citizenship on entry and discipline of study, indicates that this pattern is generally insensitive to the area of study. Only in Engineering is the number of Canadians below 50% and the number of students visas markedly higher. In the currently sensitive area of the Social Sciences 70% were Canadian and 14% Landed Immigrants.

The breakdown by universities (page 6) shows a fairly consistent pattern with Western having the highest percentage of Canadians at 66%, and Guelph the lowest percentage at 35%. (We have excluded Trent, which graduated only one PhD who was in fact a Canadian).

While there is certainly some variation in non-Canadian content among the universities, as would be expected, a finger cannot be pointed at any particular university, to say that they have been neglecting Canadian students. Even in the case of Guelph where the percentage of Canadians was the lowest, the total number of students is quite small. If one looks only at the five universities* which graduated over 100 PhDs, Waterloo has the highest percentage on student visas at 36%, while the figure for all five is 22%.

Turning to the table on page 7 where the PhDs are shown by citizenship on entry and year of graduation a pattern begins to emerge. Over the five year period, the percentage of graduates who were Canadians on entry decreased from 65% in 1964 to 54% in 1969. This was not a gradual decrease, however, since for the first three years the percentages were essentially the same with a drop in 1967 and further decreases in 1968 and in 1969. Since the number who were landed immigrants on entry remained essentially the same over this period, the difference is accounted for by an increased number of students admitted on student visas. These percentage figures can be misleading by themselves however for if one looks at the numbers of students involved, the total number of Canadians has increased from 60 in 1964 to 214 in 1968 (1968 is the last year for which statistics are available for the full year). Therefore, these data show no evidence that the increasing number of students admitted on student visas has led to an exclusion of qualified Canadians from our graduate schools.

The summary on post-graduate employment by discipline (Table 8) shows that nearly all of the PhDs in the Humanities, 96%, went into university positions. Breaking this down still further, 57% went into Ontario university positions, 13% into positions in other Canadian universities, 21% into positions in American universities. Thus, of the PhDs graduating over the past 5 years from Ontario universities in the Humanities, 70% took positions in Canadian universities. Combining these figures with the breakdown by citizenship, it would seem to be a fair conclusion that very nearly all of the Canadians who received their PhDs in the Humanities in the last five years from Ontario universities and who wanted teaching positions in Canadian universities in fact very likely obtained them.

*There are actually six, but citizenship figures were not provided by the University of Ottawa.

For the Social Sciences a similar pattern emerges with, however, some significant differences. The number taking university positions is 73% with 38% in Ontario and 18% in the rest of Canada and 13% in the U.S. Thus, a total of 56% of the PhDs in the Social Sciences obtained positions in Canadian universities with the bulk of the remainder who went into university positions going to the United States. Again it would seem to be a fair conclusion that those Canadians who received their PhDs in the Social Sciences and sought Canadian university positions also were able to find them. The remaining PhDs went into government positions (11%) and into industry (8%). Of those going into government positions, all were in Canada and for the industrial positions, half were in Canada.

The data for the Physical Sciences are significantly different. The figures showing the immediate employment after graduation (Table 13) indicate that the highest percentage, 38% took up post-doctoral fellowships and that most of these went to the United States or Europe. The next largest group obtained university employment, 20% in Canada, 5% in the U.S. and 4% in other countries. Industries hired 17% of the PhDs in the Physical Sciences and government 9%. Another significant difference appears in the data on employment by industry. Nearly half of the PhDs employed by industry went to the United States. Thus, Canadian industry hired only 8% of the PhDs graduating from the Physical Sciences from Ontario universities in the past five years.

Figures for the Life Sciences (Table 15) show a pattern of post-doctorate fellowships and other employment which is similar to that in the Physical Sciences. University employment takes 34%; 13% is shown as going into government work, presumably into government research laboratories, while industry took only 3% of the PhDs in Life Sciences.

For Engineering (Table 17) the figures show a somewhat higher percentage going into industry, namely 29%, and a larger portion remaining in Canada, namely 21%, with 5% going to the United States. However, universities are still the largest employers of PhDs with 47%, most of these in Canada.

The tables comparing the present employment and immediate post-graduation employment in Humanities and Social Sciences show no really substantial changes. In the case of the Physical Sciences (Table 12), the number on post-doctoral fellowships has understandably dropped since this would reflect only recent graduates, while the percentages in both university positions and in industry have increased. The figures for

industrial employment, however, still show half being employed in the United States, whereas, the majority of those in university positions are in Canada. For Engineering the present employment figures follow the same general pattern. There has been a drop in the number on fellowships and an increase in those in universities but no increase in those employed by industry. This would seem to imply that those on post-doctoral fellowships in Engineering move into university positions while those in industry went there immediately after graduation. Figures for the Life Sciences present employment show a significant increase in the percentage in universities and a drop in those on fellowships. Again it would appear that the majority of those on fellowships found subsequent employment in universities.

The breakdown by citizenship (Tables 20-24) is interesting in several respects. There is the large percentage of the Canadians in university positions in Canadian universities, thus, of 59% in university positions, 52% are in Canadian universities and in fact, a majority of 38% in Ontario universities. In other words, 88% of those in university teaching are in Canadain universities. This can be compared with the corresponding figure for landed immigrants, with 58% in university positions and 37% in Canadian universities. It should also be noted that this represents 64% of the landed immigrants who are university teachers. For student visa graduates, 60% are in university positions and 47% of these are in a university in their home country.

If we examine all forms of employment (Table 20) we find that 80% of the Canadian citizens were employed in Canada in the fall of 1969. Since a substantial number of the 20% outside Canada are scientists on post-doctorate fellowships, and since the earlier tables show that many of these will return, the fraction of Ontario-trained Canadian PhDs working in Canada is surprisingly high. The 10% to 15% "export" could represent an important Canadian contribution to that international exchange which is so important to scholarship. It is also an indication of the attractiveness of Canadian employment and Canadian society that the corresponding number of landed immigrants employed in Canada is 57%. This percentage will probably increase on the return to Canada of some on post-doctoral fellowships. It is sometimes feared that Canada is training landed immigrants to work in the United States; but it is clear that this is not happening on a large scale since the percentage of landed immigrants employed in the U.S.A. is not greatly different from that for Canadian citizens (22% and 15% respectively).

Students here on student visas should fall mostly into one of two categories, either as a part of the international exchange of scholarship or as a contribution to the growth of the developing countries; thus, we would expect most to return to their own lands. Unfortunately, our study does not provide a precise number for this, since, citizens of the U.S.A. or U.K. who returned to their home countries are tabulated under the headings U.S.A. and U.K., rather than under the heading Home Country (See Table 22). However, assuming that even as small a fraction as one-third of those employed in the U.S.A. and U.K. were originally citizens of those countries, the implication is that over half of the foreign students have returned to their home countries.

We draw attention to the small number of PhDs employed by Canadian industry. This is a matter that has been discussed at considerable length over the years, particularly by the scientific and engineering community in Canada. These figures seem to bear out the criticisms that have been levelled at Canadian industry. It would appear that Canadian industry is not a very large employer of PhDs.

In general, the study provides a striking confirmation of the effectiveness of the Province of Ontario Graduate Fellowship Program. In the Humanities and Social Sciences combined, 83% of the known sample are teaching in universities, and of these 76% are in Canada. Taking account of the number of O.G.F.'s awarded in the years 1964-69, of the enrolments, of the alternative sources of support (e.g. Canada Council), of the fact that the PhD graduates are amongst the better graduate students, and of the fact that the bulk of the O.G.F. support was for citizens and landed immigrants, it can be concluded rather safely that the studies of 70% to 80% of these students were made possible by OGF support.

In Science and Engineering, the percentages of graduates engaged in university teaching are rather lower but, recalling that the science quota of O.G.F.'s has been fixed at 20%, it is clear that in these fields also the O.G.F. program has achieved its goals.

December 1970.

TABLE 1

ONTARIO PhDs BY COUNTRY OF ORIGIN, 1964-69

Country	Number	% of Known Total
Canada	864	48
U.S.A.	179	10
U.K.	168	9
India	151	9
Pakistan	38	2
Other	397	22
KNOWN TOTAL	1,797	100
DON'T KNOW	9	
TOTAL	1,806	

TABLE 2

ONTARIO PhDs BY COUNTRY OF FIRST DEGREE, 1964-69

Country	Number	% of Known Total
Canada	937	60
India	141	9
U.K.	137	9
U.S.A.	124	8
Australia	27	1
Other	209	14
KNOWN TOTAL	1,575	101
DON'T KNOW	231	
TOTAL	1,806	

TABLE 3

CITIZENSHIP BEFORE GRADUATION, ONTARIO PhDs 1964-69

Citizenship	Number	% of Known Total
Canada	851	60
Landed Immigrant	212	15
Student Visa	302	22
Other	60	4
KNOWN TOTAL	1,425	101
DON'T KNOW	381	
TOTAL	1,806	

TABLE 4 - ONTARIO Ph.D.'S WITH CHANGED CITIZENSHIP AFTER GRADUATION, 1964-69

CITIZENSHIP BEFORE GRADUATION			CITIZENSHIP AFTER GRADUATION										
CITIZENSHIP	NUMBER	% OF KNOWN TOTAL	CANADA		LANDED IMM.		STDNT VISA		OTHER		DON'T KNOW		TOTAL
			NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	NUMBER	%	%
CANADA	851	60	850	100			1						100
LANDED IMM.	212	15	35	17	167	79			1		9	4	100
STDNT VISA	302	22	4	1	76	25	204	68	4	1	14	5	100
OTHER	60	4	6	10					42	70	12	20	100
KNOWN TOTAL	1425	101	895	63	243	17	205	14	47	3	35	2	99
DON'T KNOW	381		5		9						367		
TOTAL	1806		900		252		205		47		402		

TABLE 5 - ONTARIO Ph.D.'s BY CITIZENSHIP ON ENTRY AND DISCIPLINE OF STUDY, 1964-69

DISCIPLINE	TOTAL		CITIZENSHIP ON ENTRY								
			CANADA		LANDED IMM.		STUDENT VISA		OTHER		DON'T KNOW
	NUMBER	%	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER
HUMANITIES	233	13	88	54	25	16	15	8	38	23	67
SOC. SCIENCE	260	14	132	70	25	14	30	16	3	1	70
PHYSICAL SC.	728	40	390	66	98	16	99	17	7	1	134
ENGINEERING	231	13	95	46	21	10	83	40	6	4	26
LIFE SC.	311	17	135	53	41	16	70	28	6	2	59
OTHER	43	2	11	60	2	12	5	28		0	25
TOTAL	1806	99	851	60	212	15	302	22	60	4	381

* i.e. percentage of those whose citizenship is known for each discipline.

TABLE 6 - ONTARIO Ph.D.'S BY CITIZENSHIP ON ENTRY AND UNIVERSITY, 1964-69

UNIVERSITY	TOTAL		CITIZENSHIP ON ENTRY								
			CANADA		LANDED IMM.		STUDENT VISA		OTHER		DON'T KNOW
	NUMBER	%	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER	% OF * KNOWN TOTAL	NUMBER
TORONTO	785	43	439	64	88	13	123	18	41	7	94
OTTAWA	225	12									225
WESTERN	196	11	103	66	22	14	29	19	3	2	39
McMASTER	155	9	86	59	20	14	38	27			11
QUEENS	157	9	79	53	36	24	34	23			8
CARLETON	29	2	15	54	1	3	1	3	11	39	1
WINDSOR	46	3	27	59	5	11	12	26	2	4	
WATERLOO	178	10	86	49	23	13	63	36	3	2	3
YORK	11	1	7	64	4	36					
GUELPH	23	1	8	35	13	57	2	9			
TRENT	1		1	100							
TOTAL	1806	101	851	60	212	15	302	22	60	4	381

* i.e. percentage of those at each university whose citizenship is known.

TABLE 7 - ONTARIO Ph.D's BY CITIZENSHIP ON ENTRY AND YEAR OF GRADUATION, 1964-69

YEAR OF GRADUATION	TOTAL NUMBER	CITIZENSHIP ON ENTRY								DON'T KNOW
		CANADA		LANDED IMM.		STUDENT VISA		OTHER		
		NUMBER	% OF ** KNOWN TOTAL	NUMBER	% OF ** KNOWN TOTAL	NUMBER	% OF** KNOWN TOTAL	NUMBER	% OF ** KNOWN TOTAL	NUMBER
1964	103	60	65	16	18	13	15	3	3	11
1965	243	110	64	27	16	27	16	7	4	72
1966	313	146	66	26	11	37	17	12	6	92
1967	361	165	61	44	16	49	18	14	5	89
1968	450	214	57	56	14	98	26	11	2	71
1969	336*	156	54	43	15	78	27	13	5	46
TOTAL	1806	851	60	212	15	302	22	60	4	381

* The number for 1969 includes only the spring graduations.

** i.e. percentage of those for each year whose citizenship is known

TABLE 8

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

HUMANITIES

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	157	96	94	57	22	13	34	21	4	2	3	2
Government	2	1	2	1								
College	2	1	2	1								
Fellowship	1	1							1	1		
Industry	1	1			1	1						
Unemployed	1	1	1	1								
KNOWN TOTAL	164		99	60	23	14	34	21	5	3	3	2
DON'T KNOW	69						1		1		67	
TOTAL	233		99		23		35		6		70	

TABLE 9

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

H U M A N I T I E S

O C C U P A T I O N	L O C A T I O N											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	169	94	96	53	28	16	39	22	4	2	2	1
College	3	1	3	1								
Fellowship	2	1							1	1	1	1
Government	2	1	2	1								
Industry	1	1			1	1						
Unemployed	1	1	1	1								
Research	1	1					1	1				
Other	1										1	
KNOWN TOTAL	180	100	103	57	29	16	40	22	5	3	4	2
DON'T KNOW	53		1				1		1		50	
TOTAL	233		103		29		41		6		54	

TABLE 10

PRESENT (FALL 1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

SOCIAL SCIENCES

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	151	73	79	38	38	18	27	13	5	2	2	1
Industry	19	9	8	4	1	0	8	4	2	1		
Government	18	9	13	6	3	1			1	0	1	0
College	8	4	6	3	1	0			1	0		
Fellowship	4	2			1	0	3	1				
Unemployed	1	0									1	0
Research	1		1									
Other	5	2	3	1	2	1						
KNOWN TOTAL	207		110	53	46	22	38	18	9	4	4	2
DON'T KNOW	53		1				2				50	
TOTAL	260		113		46		40		9		54	

TABLE 11

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

S O C I A L S C I E N C E S

O C C U P A T I O N	L O C A T I O N											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	154	70	80	36	38	17	29	13	7	3		
Government	25	1	22	10	2	1			1	0		
Industry	18	8	9	4	1	0	5	2	2	1	1	0
College	9	4	7	3	1	0			1	0		
Fellowship	8	4	1	0	2	1	4	2			1	0
Research	2	1	2	1								
Unemployed	1	0									1	0
Other	4	2	2	1	2	1						
KNOWN TOTAL	221	100	123	55	46	21	38	17	11	5	3	1
DON'T KNOW	39		1				1		1		36	
TOTAL	260		124		46		39		12		39	

TABLE 12

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs. 1964-69

PHYSICAL SCIENCES

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	273	46	118	20	66	11	40	7	32	5	17	3
Industry	147	25	51	9	19	3	67	11	8	1	2	0
Fellowship	85	14	15	3	13	2	30	5	6	1	21	4
Government	76	13	44	7	12	2	9	2	9	2	2	0
College	7	1	4	1	2	0	1	0				
Research	7	1	2	0					3	1	2	0
Other	3	1	3	1								
KNOWN TOTAL	598		237	40	112	19	147	25	58	10	44	7
DON'T KNOW	130		4		1		2		5		118	
TOTAL	728		241		113		149		63		162	

TABLE 13

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

P H Y S I C A L S C I E N C E S

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
Fellowship	235	38	35	6	18	3	87	14	14	2	81	13
University	206	34	83	14	37	6	33	5	24	4	29	47
Industry	102	17	33	5	18	3	46	8	5	1		
Government	55	9	24	4	13	2	8	1	7	1	3	0
College	6	1	3	0	1	0	2	0				
Research	3	0							2	0	1	0
Other	4	1	3	0							1	0
KNOWN TOTAL	611	100	181	30	87	14	176	30	52	9	115	19
DON'T KNOW	117		7		3		4		5		98	
TOTAL	728		188		90		180		57		213	

TABLE 14

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

L I F E S C I E N C E S

O C C U P A T I O N	L O C A T I O N											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	138	54	61	24	23	9	25	10	22	9	7	3
Government	39	15	25	10	8	3	2	1	3	1	1	0
Fellowship	35	14	8	3	3	1	16	6	2	1	6	2
Research	13	5	6	2	1	0	3	1	2	1	1	0
Industry	10	4	5	2	2	1	2	1	1	0		
College	5	2	4	2			1	0				
Unemployed	3	1	1	0							2	1
Other	11	4	7	3	2	1	2	1				
KNOWN TOTAL	254		117	46	39	15	51	20	30	12	17	7
DON'T KNOW	57		2		2		2		2		49	
TOTAL	311		119		41		53		32		66	

TABLE 15

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

L I F E S C I E N C E S

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
Fellowship	103	38	24	9	5	2	43	16	7	3	24	9
University	94	34	37	13	13	5	22	8	15	5	7	3
Government	36	13	21	8	9	3	1		3	1	2	1
Research	15	5	7	3	1	0	4	1	2	1	1	0
Industry	9	3	4	1	2	1	2	1	1	0		
College	6	2	5	2			1	0				
Unemployed	3	1									3	1
Other	8	3	4	1	2	1	1	0			1	0
KNOWN TOTAL	274		102	37	32	12	74	27	28	10	38	14
DON'T KNOW	37		1		2		3		3		28	
TOTAL	311		103		34		77		31		66	

TABLE 16

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

ENGINEERING

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	111	56	61	31	19	10	6	3	25	13		
Industry	51	26	26	13	7	4	14	7	3	2	1	1
Government	15	8	11	6	2	1	1	1			1	1
Fellowship	10	5	4	2			1	1			5	3
College	3	2	1	1			2	1				
Research	2	1	1	1			1	1				
Unemployed	1	1					1	1				
Other	4	2	2	1					2	1		
KNOWN TOTAL	197		106	54	28	14	26	13	30	15	7	4
DON'T KNOW	34						1		1		32	
TOTAL	231		106		28		27		31		39	

TABLE 17

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

ENGINEERING

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	95	47	54	26	12	6	6	3	22	11	1	0
Industry	61	29	36	17	8	4	11	5	6	3		
Fellowship	23	11	13	6	1	0	4	2	2	1	3	1
Government	17	8	13	6	1	0	2	1			1	0
Research	5	2	4	2			1	0				
College	3	1					2	1	1	0		
Unemployed	1	0							1	0		
Other	3	1	2	1					1	0		
KNOWN TOTAL	208		122	59	22	11	26	13	33	16	5	2
DON'T KNOW	23						1		1		21	
TOTAL	231		122		22		27		34		26	

TABLE 18

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

OTHER DISCIPLINES

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	20	95	7	33	5	24	5	24	3	14		
College	1	5			1	5						
KNOWN TOTAL	21	100	7	33	6	29	5	24	3	14		
DON'T KNOW	22										22	
TOTAL	43		7		6		5		3		22	

TABLE 19

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

OTHER DISCIPLINES

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	19	82	7	30	4	17	5	22	3	13		
College	3	13			1	4	1	4	1	4		
Government	1	4			1	4						
KNOWN TOTAL	23		7	30	6	26	6	26	4	17		
DON'T KNOW	20						2				18	
TOTAL	43		7		6		8		4		18	

TABLE 20

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

CANADIAN CITIZENS

OCCUPATION	LOCATION															
	TOTAL		ONTARIO		REST OF CANADA		U.S.A.		U.K.		HOME COUNTRY		OTHER		DON'T KNOW	
	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	Number	
University	478	59	307	38	116	14	42	5	2				10	1	1	
Industry	131	16	63	8	18	2	48	6	1				1			
Government	89	11	67	8	19	2	3									
Fellowship	68	8	11	1	9	1	26	3	15	2			6		1	
College	13	2	10	1	2		1									
Research	12	1	6		1		2		1				2			
Unemployed	2		1										1			
Other	13	2	11	1	1		1									
KNOWN TOTAL	806	99	476	59	166	21	123	15	19	2			20	2		
DON'T KNOW	94		6		2		2								84	
TOTAL	900		482		168		125		19				20		86	

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TABLE 21

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

LANDED IMMIGRANT

OCCUPATION	LOCATION															
	TOTAL		ONTARIO		REST OF CANADA		U.S.A.		U.K.		HOME COUNTRY		OTHER		DON'T KNO
	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	Number
University	130	58	57	25	26	12	21	9	6	3	17	8	3	1	
Industry	45	20	19	8	5	2	18	8	3	1					
Fellowship	28	13	5	2	3	1	9	4	8	4			1		2
Government	17	8	9	4	3	1	2	1	2	1	1				
Unemployed	1														1
Other	3	1	3	1											
KNOWN TOTAL	224	100	93	41	37	16	50	22	19	8	18	8	4	2	
DON'T KNOW	28						1				1				26
TOTAL	252		93		37		51		19		19		4		29

TABLE 22

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

HOLDERS OF STUDENT VISAS

OCCUPATION / LOCATION

OCCUPATION	TOTAL		ONTARIO		REST OF CANADA		U.S.A.		U.K.		HOME COUNTRY		OTHER		DON'T KNOW
	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	Number
University	105	60	11	6	4	2	31	18	1	1	49	29	9	5	
Fellowship	22	13	8	5	3	2	8	5	2	1					1
Industry	19	11	1	1	1	1	7	4	1	1	8	5	1	1	
Government	12	7	2	1	1	1					8	5	1	1	
Research	7	4	2	1			1	1	2	1	2	1			
College	5	3	3	2			2	1							
Unemployed	1	1					1	1							
Other	2	1							1	1	1	1			
KNOWN TOTAL	173	100	27	16	9	5	50	29	7	4	68	39	11	6	
DON'T KNOW	32						3				5		2		22
TOTAL	205		27		9		53		7		73		13		23

TABLE 23

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

HOLDERS OF OTHER VISAS

OCCUPATION	LOCATION															
	TOTAL		ONTARIO		REST OF CANADA		U.S.A.		U.K.		HOME COUNTRY		OTHER		DON'T KNOW	
	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	No.	% of Known Total	Number	
University	29	78	5	13	2	5	17	46			4	11			1	
Industry	4	11	1	3			3	8								
Fellowship	1	3			1	3										
Government	1	3	1	3												
College	1	3	1	3												
Other	1	3					1	3								
KNOWN TOTAL	37	101	8	22	3	8	21	57			4	11				
DON'T KNOW	10						1				1				8	
TOTAL	47		8		3		22				5				9	

TABLE 24

PRESENT (1969) EMPLOYMENT OF ONTARIO PhDs, 1964-69

SUMMARY

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	850	59	420	29	173	12	137	10	91	6	29	2
Industry	228	16	90	6	30	2	91	6	14	1	3	
Government	150	10	95	7	25	2	12	1	13	1	5	
Fellowship	135	9	27	2	17	1	50	3	9	1	32	2
College	26	2	17	1	4		4		1			
Research	23	2	10	1	1		4		5		3	
Unemployed	6		2				1				3	
Other	23	2	15	1	4		2		2			
KNOWN TOTAL	1441	100	676	47	254	18	301	21	135	9	75	5
DON'T KNOW	365		7		3		8		9		338	
TOTAL	1806		683		257		309		144		413	

TABLE 25

IMMEDIATE POST-GRADUATION EMPLOYMENT OF ONTARIO PhDs, 1964-69

SUMMARY

OCCUPATION	LOCATION											
	Total		Ontario		Rest of Canada		U.S.A.		Home Country		Other	
	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total	Number	% of Known Total
University	737	49	357	24	132	9	134	9	75	5	39	3
Fellowship	371	25	73	5	26	2	138	9	24	2	110	7
Industry	191	13	82	6	30	2	64	4	14	1	1	
Government	136	10	82	6	26	2	11	1	11	1	6	
College	30	2	18	1	3		6		3			
Research	26	1	13	1	1		6		4		2	
Unemployed	6		1						1		4	
Other	20	1	11	1	4		1		1		3	
KNOWN TOTAL	1517	100	637	42	222	15	360	24	133	9	165	11
DON'T KNOW	289		10		5		12		11		251	
TOTAL	1806		647		227		372		144		416	

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SUPPLEMENT #1

TO

SURVEY OF EMPLOYMENT OF

ONTARIO PH.D. GRADUATES - 1964-69

The attached tables show immediate post-graduation employment of PhDs following the Autumn and Spring Convocation of Ontario universities, 1969-70. The persons shown as unemployed in the tables may well be employed by this time.

January, 1971.

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

	HEALTH SCIENCES		
Occupation	Number in Ontario	Number in Rest of Canada	Number in Other Countries
University Teaching	3	1	4
Industry	-	-	-
Research Fellowship	-	-	-
Private Research Institute	-	-	-
Government	-	-	-
Unemployed	-	-	-
Other	-	-	-
Not Known	-	-	-
TOTAL	3	1	4

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

	LIFE SCIENCES		
Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	11	5	11
Industry	1	1	-
Research Fellowship	14	6	24
Private Research Institute	1	2	1
Government	4	3	5
Unemployed	1	-	2
Other	2	1	1
Not Known	-	1	-
TOTAL	34	19	44

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

HUMANITIES

Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	49	17	13
Industry	-	-	-
Research Fellowship	-	-	-
Private Research Institute	-	-	-
Government	1	-	2
Unemployed	3	-	2
Other	3	-	-
Not Known	1	2	-
TOTAL	57	19	17

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

	PHYSICAL SCIENCES (including Math.)		
Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	20	8	16
Industry	12	6	15
Research Fellowship	19	21	53
Private Research Institute	3	1	6
Government	11	4	5
Unemployed	1	1	-
Other	4	-	2
Not Known	2	-	4
TOTAL	72	41	101

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

SOCIAL SCIENCES

Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	27	17	22
Industry	1	1	-
Research Fellowship	3	1	3
Private Research Institute	7	-	-
Government	9	2	4
Unemployed	2	1	-
Other	2	-	3
Not Known	3	-	2
TOTAL	54	22	34

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

ENGINEERING

Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	22	3	8
Industry	14	4	3
Research Fellowship	18	1	6
Private Research Institute	3	-	4
Government	5	2	4
Unemployed	1	-	1
Other	-	-	-
Not Known	1	-	2
TOTAL	64	10	28

IMMEDIATE POST-GRADUATION EMPLOYMENT OF PhDs 1969-70

ONTARIO UNIVERSITIES

CONVOCATIONS OF AUTUMN 1969 THROUGH SPRING 1970

	ALL DISCIPLINES		
Occupation	Number In Ontario	Number In Rest of Canada	Number In Other Countries
University Teaching	132	51	74
Industry	28	12	18
Research Fellowship	54	29	86
Private Research Institute	14	3	11
Government	30	11	20
Unemployed	8	2	5
Other	11	1	6
Not Known	7	3	8
TOTAL	284	112	228